

## CLAIMS

1. A vehicle antitheft system comprising:

an immobilizer unit including:

5 a first data processor;

a first communication part connected with the first data processor;

a first antenna connected with the first communication part;

10 a first storage connected with the first data processor, the first storage preliminarily storing first data for mutual authentication; and

a second storage connected with the first data processor; and

a portable unit including:

a second data processor;

15 a second communication part connected with the second data processor;

a second antenna connected with the second communication part;

a third storage connected with the second data processor, the third storage preliminarily storing the first data for mutual authentication; and

20 a fourth storage connected with the second data processor, the fourth storage preliminarily storing one of the first data for mutual authentication and second data for mutual authentication different from the first data for mutual authentication;

wherein, one of the immobilizer unit and the portable unit further has an information reception part connected with one of the first data processor and the  
25 second data processor, and when a first instruction is fed into the information reception part, using the first data for mutual authentication stored in the first storage and the first data for mutual authentication stored in the third storage, the first data processor and the second data processor authenticate each other via the first antenna and the

second antenna; and

the second data processor further stores, into the third storage, the one of the first data for mutual authentication and the second data for mutual authentication, the one being stored in the fourth storage, transmits the stored one of  
 5 the first data for mutual authentication and the second data for mutual authentication via the second antenna, and the first data processor stores, into the second storage, the one of the first data for mutual authentication and the second data for mutual authentication received via the first antenna.

10 2. A vehicle antitheft system comprising:

an immobilizer unit including:

a first data processor;

a first communication part connected with the first data  
 processor;

15 a first antenna connected with the first communication part;

a first storage connected with the first data processor, the first  
 storage preliminarily storing first data for mutual authentication; and

a second storage connected with the first data processor, the  
 second storage preliminarily storing one of the first data for mutual authentication and  
 20 second data for mutual authentication different from the first data for mutual  
 authentication; and

a portable unit including:

a second data processor;

a second communication part connected with the second data  
 25 processor;

a second antenna connected with the second communication part;

and

a third storage connected with the second data processor, the

third storage preliminarily storing the first data for mutual authentication;

wherein, one of the immobilizer unit and the portable unit further has an information reception part connected with one of the first data processor and the second data processor, and when a first instruction is fed into the information reception part, using the first data for mutual authentication stored in the first storage and the first data for mutual authentication stored in the third storage, the first data processor and the second data processor authenticate each other, via the first antenna and the second antenna; and

the first data processor further transmits the one of the first data for mutual authentication and the second data for mutual authentication via the first antenna, the one being stored in the second storage, and the second data processor stores, into the third storage, the one of the first data for mutual authentication and the second data for mutual authentication received via the second antenna.

3. A vehicle antitheft system comprising:

an immobilizer unit including:

a first data processor;

a first communication part connected with the first data processor;

a first antenna connected with the first communication part;

a first storage connected with the first data processor, the first storage preliminarily storing first data for mutual authentication; and

a second storage connected with the first data processor; and

a portable unit including:

a second data processor;

a second communication part connected with the second data processor;

a second antenna connected with the second communication part;

and

a third storage connected with the second data processor, the third storage preliminarily storing the first data for mutual authentication;

wherein, one of the immobilizer unit and the portable unit further has an  
 5 information reception part connected with one of the first data processor and the second data processor, and when a first instruction is fed into the information reception part, using the first data for mutual authentication stored in the first storage and the first data for mutual authentication stored in the third storage, the first data processor and the second data processor authenticate each other, via the first antenna and the  
 10 second antenna; and

the second data processor further generates, stores into the third storage, and transmits via the second antenna, one of data identical to the first data for mutual authentication and second data for mutual authentication different from the first data for mutual authentication, and the first data processor stores, into the second  
 15 storage, the one of the first data for mutual authentication and the second data for mutual authentication received via the first antenna.

#### 4. A vehicle antitheft system comprising:

an immobilizer unit including:

20 a first data processor;

a first communication part connected with the first data processor;

a first antenna connected with the first communication part;

a first storage connected with the first data processor, the first  
 25 storage preliminarily storing first data for mutual authentication; and

a second storage connected with the first data processor; and

a portable unit including:

a second data processor;

a second communication part connected with the second data processor;

a second antenna connected with the second communication part; and

5 a third storage connected with the second data processor, the third storage preliminarily storing the first data for mutual authentication;

wherein, one of the immobilizer unit and the portable unit further has an information reception part connected with one of the first data processor and the second data processor, and when a first instruction is fed into the information reception part, using the first data for mutual authentication stored in the first storage and the first data for mutual authentication stored in the third storage, the first data processor and the second data processor authenticate each other, via the first antenna and the second antenna; and

the first data processor further generates, stores into the second storage, and transmits via the first antenna, one of data identical to the first data for mutual authentication and second data for mutual authentication different from the first data for mutual authentication, and the second data processor stores, into the third storage, the one of the first data for mutual authentication and the second data for mutual authentication received via the second antenna.

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5. The vehicle antitheft system according to any one of claims 1 through 4, wherein, upon input of a second instruction into the information reception part, when both of data stored in the second storage and the third storage are the second data for mutual authentication, one of the first data processor and the second processor generates and stores, into one of the second storage and the third storage, first accumulation data different from the second data for mutual authentication; and

when both of data stored in the second storage and the third storage are identical to the first data for mutual authentication, one of the first data processor and

the second data processor generates and stores, into one of the second storage and the third storage, second accumulation data different from the first data for mutual authentication.

5           6. The vehicle antitheft system according to any one of claims 1 through 4, wherein, upon input of a second instruction into the information reception part, when both of data stored in the second storage and the third storage are the second data for mutual authentication, the first data processor transmits the first data for mutual authentication stored in the first storage via the first antenna, and the second data  
10 processor stores, into the third storage, the first data for mutual authentication received via the second antenna; and

when both of data stored in the second storage and the third storage are identical to the first data for mutual authentication, one of the first data processor and the second data processor generates and stores, into one of the second storage and the  
15 third storage, second accumulation data different from the first data for mutual authentication.

7. The vehicle antitheft system according to any one of claims 1 through 4, wherein the portable unit further has a fifth storage preliminarily storing an ID code, and the first data processor and the second data processor authenticate each other also  
20 using the ID code.

8. The vehicle antitheft system according to claim 7, wherein the immobilizer unit further has a sixth storage, the second data processor transmits, via the second  
25 antenna, the ID code stored in the fifth storage, and the first data processor stores, into the sixth storage, the ID code received via the first antenna.

9. The vehicle antitheft system according to claim 8, wherein upon input of a

second instruction into the information reception part, the first data processor generates third accumulation data different from the ID code stored in the sixth storage, and stores the third accumulation data into the sixth storage.